

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number  
**WO 2005/095661 A2**

(51) International Patent Classification<sup>7</sup>: C22C 33/02,  
B22F 3/10

Francisco, Castro [ES/FR]; Lottissement Tipulenia No 2,  
F-Ascain (FR).

(21) International Application Number:  
PCT/GB2005/000904

(74) Agents: LONG, Edward, Anthony et al.; Hulse & Co.,  
St James House, Vicar Lane, Sheffield S1 2EX (GB).

(22) International Filing Date: 9 March 2005 (09.03.2005)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English  
(26) Publication Language: English  
(30) Priority Data:  
0407539.6 2 April 2004 (02.04.2004) GB

(71) Applicants (for all designated States except US): ATOMISING SYSTEMS LIMITED [GB/GB]; Unit 8, M1 Distribution Centre, Meadowhall, Sheffield S9 1EW (GB). SCHUNK SINTERMETALLTECHNIK GMBH [DE/DE]; Rodheimer Strasse 59, D-35452 Heuchelheim (DE). AMES-ALEACIONES DE METALES SINTERIZADOS SA [ES/ES]; Ctra. Laurea Miro 388, E-08980 Sant Feliu de Llobregat, Barcelona (ES).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

Published:

(75) Inventors/Applicants (for US only): MITCHELL, Stephen, Charles [GB/GB]; 45 Valley View Close, Oakworth, Keighley, West Yorkshire BD22 7LZ (GB). INIGEUZ, Miren, Sarasola [ES/ES]; Po Dr. Maranon 3-2A, E-20009 San Sebastian (ES). FERNANDEZ,

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/095661 A2

(54) Title: MAKING SINTERED, IRON-BASED ALLOY PARTS BY USING BORON-CONTAINING MASTER ALLOYS

(57) Abstract: A method of making high-density (>7.Og/ml) sintered iron-based alloy parts by using boron-containing Master Alloys comprises the steps of mixing an atomised, boron-containing master alloy powder, or a plurality of master alloy powders at least one of which is boron-containing, with a conventional iron or iron alloy powder; optionally adding graphite and a lubricant in conventional amounts as used in powder metallurgy technology; and pressing and sintering the mix to an increased density, preferably in a reducing, inert or vacuum atmosphere at 1050 to 1300°C, to produce the part required. The invention also includes parts produced by the above defined method.